ENERGY ANGLES

TENNESSEE ENERGY EDUCATION NETWORK

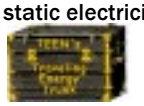
ENERGY DIVISION–DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT

November - December, 2003

TEEN's Traveling Energy Trunks are Here!

Now Tennessee teachers can check out great energy related teaching kits for use in their classrooms. Each kit comes with with materials and a teacher's guide that contains activities and information needed to teach the topic. There are twelve different kits available:

Electro Works (Grades 4-7)
Explore the basic concepts of atomic structure and electricity with center-based experiments on static electricity, batteries, magnets, electromagnetism, and circuits.



Science of Energy (Grades K-4)
Explore the science of motion, heat, sound, and light with a series of simple activities that incorporate both English and metric measurements, using safe and age-appropriate thermometers, balances, rulers, measuring tapes, beakers and graduated cylinders. Students learn to make observations, measure, record results, compare and contrast, categorize, make predictions, analyze and graph results, and draw conclusions.

Science of Energy (Grades 4-8 and Grades 7-12)
Students can participate in hands-on experiments to explore the different forms of energy and how energy is transformed from one form to another. Kit includes teacher demonstrations and six different stations.

Exploring Magnets (Grades K-4)
This kit contains background information, transparency masters, demonstration materials, and activities that can be set up in five centers to help students learn the basics of magnetism.

Energy Works (Grades 4-8)
Students experiment with motion, sound, light, heat, growth, and powering technology. The kit also includes teacher demonstrations.

The Sun & Its Energy (Grades K-2)
Includes a flip book and class-based activities that use thermometers, a solar oven, a solar house kit with solar cells, a solar balloon, solar beads, and more.

Energy from the Sun (Grades 4-6)
The kit includes student guides for conducting activities, two solar cookers, four solar house kits with ceiling fans and lights powered by PV panels, thermometers, solar balloons, radiometers, and more.

Exploring Solar Energy (Grades 4-8)
Includes five sets of equipment to conduct experiments, including radiation cans, thermometers, concave mirrors for solar concentration studies, PV kits, and more.

Monitoring & Mentoring (Grades 4-6)
Activities introduce students to methods of measuring energy usage, determining costs, and quantifying environmental effects, including reading electric and natural gas meters, EnergyGuide labels, and electric nameplates.

Learning & Conserving (Grades 7-12)
Secondary students learn about energy consumption and conservation by reading utility meters and utility bills, comparing EnergyGuide labels, and exploring electric nameplates. Students conduct comprehensive surveys of the school building and school energy consumption and develop a plan for the school that includes suggestions for retrofits, systems management, and conservation practices.

Building Buddies (Grades K-3)
An energy conservation kit for introducing the basic concepts of energy use and conservation, beginning with activities focused on home energy use and extending to school energy use and conservation measures.

TO REQUEST A KIT, send a letter on your school's letterhead addressed to:

TEEN
Energy Division/TN Dept. of ECD/9th Floor
312 Eight Avenue North
Nashville, TN 37243-0405

The Traveling Energy Trunks are loaned for a two-week period. Teachers are responsible for the return postage.

www.tnenergy.com for information about all kinds of energy facts and resources. The site is divided into 6 sections –For Teachers, Contests, All About Energy, Games, Kids Page and Energy Links.

December is the month for celebrations, including Hanukkah, Christmas, and Kwanzaa. Here are some websites that give lots of ideas for helping students learn about these holidays.

Hanukkah is an eight night celebration observed during November and December by Jewish families. Gifts are given, games are played, traditional foods are served and Hanukkah candles are lit. The following are websites related to Hanukkah:
http://www.joi.org/celebrate/hanuk which contains the history of this holiday and how it is celebrated.
http://www.jewfaq.org/holiday7.htm provides information about the significance of Hanukkah.
http://www.hanukat.com has the story of HanuKat, a friendly feline who introduces the story and traditions of Hanukkah.
http://www.night.net/kids/hanukkah.html-ssi is a site that contains a discussion of the story of Hanukkah.
For a page of links to Hanukkah activities for the classroom, printables, and games, visit
http://www.eduplace.com/monthlytheme/december/hanukkah_activities.html

Christmas is celebrated around the world and in many different ways. It is a time for family and friends to come together for food, giving, and fellowship. Some websites that focus on Christmas traditions across cultures include the following:
http://www.santas.net/aroundtheworld.htm which provides virtual visits to Christmas celebrations in several countries.
Find out how to say "Merry Christmas" in many different languages at http://www.travlang.com/xmas.html
The history of the Christmas tree is depicted at http://www.christmasarchives.com/trees.html
Old and new stories of Christmas can be found at http://www.kidsdomain.com/holiday/xmas/stories.html
Christmas activities ranging from a printable alphabet book for K-1 students to Christmas art to online games and much more, visit http://www.eduplace.com/monthlytheme/december/christmas_activities.html

Kwanzaa is observed from December 26 to January 1 and honors African traditions and values. This holiday focuses on the principles of unity, self-determination, collective work and responsibility, cooperative economies, purpose, creativity, and faith. Some web sources for Kwanzaa are:
Kwanzaa has an official site at http://officialkwanzaawebsite.org which includes information about the seven principles and symbols of the holiday.
Other sites which include complete explanations of Kwanzaa are http://www.tike.com/celeb-kw.htm, http://www.kidskourt.com/Holidays/KwanPage.htm, and http://www.melanet.com/kwanzaa
To find Kwanzaa greetings, recipes, and the history of Kwanzaa, visit http://www.blackvoices.com/feature/kwanzaa/index.html
For Kwanzaa activities for the classroom, such as coloring pages, bookmarks, online matching game, story generator, and more, visit http://www.eduplace.com/monthlytheme/december/kwanzaa_activities.html

Information for this article was found at Education Place.com

Energy Bills and Holiday Cheer

Keep the holidays bright and cheery while keeping energy costs down by following these suggestions:

- Operate lights for no more than six evening hours a day.
- Turn lights out when you are away, which is also a safety tip. Unplug lights when you go to bed or are away.
- Consider using the energy-saving LED holiday lights that use about 99% less energy than larger one and last 100,000 hours.
- Beware of "icicle" lights, even though they are beautiful, they contain more lights per linear foot.
- Take lights down after the holidays!

Helping a Good Cause

Ever wonder what to do with those old holiday greeting cards? Tossing in the trash adds to the landfill and seems like such a waste. How about considering donating them to the St. Jude's Ranch for Children? They use the old cards to make new ones and sell them with all proceeds going to the Ranch. They cut out the designs from old cards and then attach them to new cards that have messages laser printed on the inside. Presto, a new greeting card!

The cards don't have to be Christmas cards, they welcome cards from all seasons and events.

Send to:
St. Judes Ranch for Children
100 St. Jude's Street
Boulder City, NV 89005

Recycling Ideas for the Holidays

A Newspaper Bow

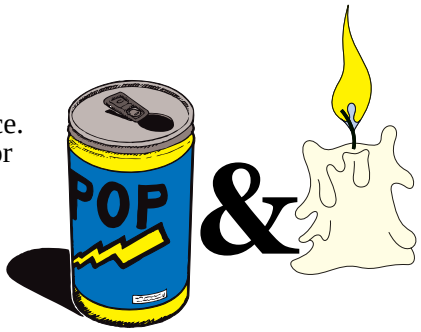
Yes, not only can you wrap gifts in newspaper, you can also use newspaper to make an unusual bow as a final touch!

1. Find a colorful advertising insert.
2. Take four to six insert sheets folded inside each other, and measure seven inches away from the fold. Cut off any remaining paper
3. Cut narrow strips (about ¼ inch wide) into the open edge of the folded sheets. Be careful not to cut through the center fold. Leave about ¼ inch from the fold uncut.
4. Unfold the insert sheets. Roll the sheets from top to bottom. Tape in place.
5. To curl each of the cut strips, use one hand to hold the strip at the center while you use the other hand to pull the strip against the blade of an open scissors.
6. You can vary the size of your bows by the number of pages you use and the length of the strips you cut. You can also make newspaper bows out of regular newsprint. However, it is best to begin with the glossy pages of advertising inserts since they are a little bit stronger.

Craft a Luminary

Americans use more than 200 million cans each day, second only to the automobile and construction industries in use of steel. One way to recycle empty metal food cans is to make a luminary.

1. Rinse the can and remove paper label.
2. Hammer any sharp edges flat.
3. Fill can with cold water to 1.5" from top and freeze.
4. Remove can from freezer and use rubber bands to hold a design pattern in place. Patterns should be simple, such as a star, and can come from a coloring book or other source.
5. Place can on some type of cushioning such as an old rug or pillow.
6. Use hammer and nail to tap holes into the can and ice.
7. Allow ice to melt and empty can.
8. Place a votive candle in the bottom.
9. Great gift idea!



Soda Can Carolers

Make a chorus of carolers out of smashed soda cans by simply smashing down with foot and painting a face on the top, using the opening as the caroler's mouth. For best results, use acrylic paints. Glue pieces of material around the can to resemble coats, scarves, etc. Mini pom-poms can be glued on each side of the head to resemble ear muffs. Hang on a board together.

For hundreds of ideas for recycling materials into gifts and ornaments, visit The Imagination Factory's Trash Matcher at http://www.kid-at-art.com/htdoc/matchtmp.html

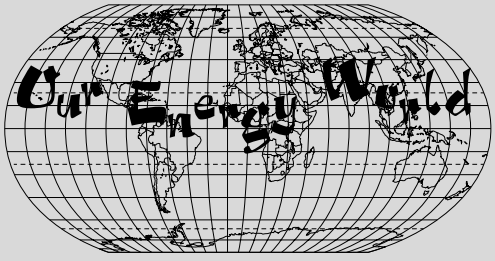
A Bright Idea for the Classroom

This is a really neat idea from "I Love That Teaching Idea" website. First, download a reproducible that has Christmas lights and make several copies of it on brightly colored paper. Each bulb reads, "_____'s light really shined by…" Your students can make their classroom string of bright lights by filling in the name of someone they see doing something positive and either writing or drawing a picture of what they did. For example, one student may observe another helping a classmate who had fallen at recess. The lights are taped to yarn strung across the room. The teacher can also join in this activity, which takes very little energy and is sure to light up the face of students.

To access the activity, visit http://www.ilovethatteachingidea.com/ideas/011201_our_string_of_bright_lights.htm

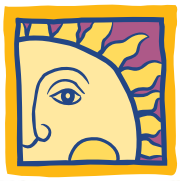
ATTENTION!!!!

The new & improved "Our Energy World" newspaper for grades 6-8 is now available. Request it now by calling 1-800-342-1340



The Longest Day of the Year: Winter Solstice

At exactly 2:04 AM, EST on December 22, 2003, the earth will be in the position for the sun to shine directly over the tropic of Capricorn. This event marks the shortest day and longest night of the year, otherwise known as the winter solstice. The winter solstice ushers in the beginning of winter for the Northern Hemisphere and the beginning of summer for the Southern Hemisphere. The word solstice comes from the Latin "solstitium" in which "sol" means sun and "stitium" means "a stoppage." During the winter solstice, the sun appears at its lowest point in the sky and its elevation at noon appears to be the same for several days before and after the solstice. Following the winter solstice, the days begin to grow longer and the nights shorter. The winter solstice has as its counterpart, the summer solstice, which occurs on June 21 or 22 each year and is the longest day and shortest night of the year. Both of these events are part of the earth's cycle of seasons which is caused by the Earth's position as it revolves around the sun. When the Northern Hemisphere is tilted towards the sun, it receives more direct sunlight and thereby experiences summer while the Southern Hemisphere is experiencing less direct sunlight and winter. As the Earth continues in its path, the opposite occurs when the Southern Hemisphere is angled towards the sun and Northern Hemisphere away from the sun as it will be on December 21. Happy Winter!



Get Ready for Ole' Man Winter

Yes, winter is upon us and being prepared can help prevent many of the emergencies or catastrophes that often take us by surprise. Each year, dozens of Americans die due to exposure to cold, vehicle accidents, fires and other reasons related to winter weather.

You can take steps to protect yourself, your family, pets and property against the snow, ice, cold, and strong winds of winter.

Many deaths can be prevented by being properly informed and prepared. For example, a person suffering from hypothermia in which the extremities are excessively cold, can die from heart failure if appropriate steps are not followed to warm them slowly beginning with the body core. Warming their arms and legs first can drive the cold blood toward the heart. More on treating hypothermia and other conditions as well as many other winter weather information and preparation can be found in the downloadable publication, "Winter Storms: The Deceptive Killers" found at http://www.nws.noaa.gov/om/winterstorm/winterstorms.pdf. A preparedness book for ages 5-8 is available for the Red Cross at http://www.redcross.org/services/disaster/eduinfo/beready.pdf

Also visit the National Weather Service website for lots more useful and interesting information about winter weather, including an updated wind chill chart that can be used to calculate the wind chill and how long it would take a person to get frost bite. This would make a great math activity for middle and secondary students. Go to http://www.nws.noaa.gov/om/winter/index.shtml

ENERGY ANGLES
is published five times a year by the Tennessee Energy Education Network, a program of the Energy Division, Department of Economic and Community Development.

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This public document was promulgated at a cost of $3,078 or .30 each. 10,000 copies. Authorization No. 330896. July, 2003.

ENERGY ANGLES
Tennessee Energy Education Network
TN Dept. of ECD/Energy Division
312 Eighth Avenue North, Ninth Floor
Nashville, TN 37243-0405
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